Status of virus-free, nematode-free strawberry plants, October 15, 1955

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Eastern United States

1. Plants relatively free of viruses of the following 28 varieties are available from nurseries for planting by growers:

Albritton	Dunlap	Marshall	Robinson
Armore	Fairfax	Massey	Stelemaster
Aroma	Howard 17 (Premier)	Midland	Sparkle (Paymaster)
Bellmar	Klondike	Missionary	Tennessean
Blakemore	Klonmore	New York	Tennessee Beauty
Catskill	Konvoy	Pocahontas	Tennessee Shipper
Dixieland	Marion Bell	Redstar	Vermilion

2. Sources of virus-free plants may be obtained through the State Experiment Stations.

3. No virus-free stocks are available as yet for nurserymen of:

Aberdeen	Dorsett	Northwest	Suwannee
Beaver	Fairland	"Old Premier"	Temple
Big Joe	Fairpeake	Streamliner	

4. Virus-free plant-stocks are being propagated by nurseries, but are not for sale, of the following:

Eden	Florida-90
Empire	Gem (= Superfection, Brilliant)

5. Single plants apparently virus-free from heat-treatment have been obtained at Beltsville, Md., of:

Big Joe	Fairland	Streamliner	Twentieth Century
Dorsett	Fairpeake	Temple	

6. A few plants are available for foundation stocks for screenhouses of the following varieties in addition to those listed in (1):

Donner (California variety)	Gem	Parramos (Guatemala variety)	Sioux
Eden	Lassen (California variety)	Royal Sovereign (English variety)	Tahoe (California variety)
Empire	Orland (Maine variety)	Sierra (Calif. ")	William Belt
Florida-90			

7. Last year one to several virus-free plants of varieties adapted to specific regions were sent from Beltsville to approximately 25 different persons or institutions for foundation stocks.

8. For plant propagators, we still suggest (a) propagation as far as possible of virus-free stock only, and all virus-free stocks isolated; (b) isolation of 3,000 feet from non-virus-free plants, either cultivated or wild (some States require 1 mile isolation); (c) chlordane at 10 pounds actual per acre broadcast before planting to control soil insects; (d) field soil fumigation as discussed below; (e) dusting with 1 percent parathion regularly every 2 weeks from time of planting until late fall, using 20 to 30 pounds of dust per acre.

9. In the program to provide growers with nematode-free plants, some 2,000,000 plants were treated commercially by nurserymen in hot water at 121° for 7 minutes or 127° for 2 minutes. These propagators were so well pleased that they plan to treat all their stocks next winter.

10. Only dormant plants will tolerate the heat treatment, and dormant plants held in 32° F. cold storage for 2 weeks before treating suffer less damage than those

not held in cold storage.

11. Soil fumigation with DD at 30 gallons per acre at each of 2 applications (1 to 2 weeks apart with the soil replowed before the second application), or similar applications of fumigants containing 83 percent ethylene dibromide at 7½ gallons per application have given effective nematode control in most cases. The cost of double fumigation is about $100 per acre. Soil temperature at a depth of 6 inches should be above 50° F.; that is, soil should not be fumigated too late in the fall or too early in the spring; the best time is early fall. In planning the job, it should be remembered that the first application of fumigant must be made 3 to 6 weeks before planting and that further delays due to bad weather are always possible.

12. The importance of following manufacturer's directions in the use of soil fumigants should be emphasized. Trash should be well cut up with the disc harrow before the land is plowed at least 8 inches deep. Clods should be pulverized and trash which is turned under given time to rot. The soil should be neither very wet nor very dry, but about as you would want it for planting. Effective fumigation depends on careful adjustment and operation of the applicator; this job must be carefully supervised. Smoothing and sealing of the soil surface by a drag or roller immediately following the applicator is an important part of the job.

13. Strawberries have been seriously damaged by nematodes in all parts of the country from farthest north to farthest south, and latest evidence indicates that damage may be caused not only by root-knot and meadow nematodes, but by several kinds of ectoparasitic nematodes as well.

14. The soil in our screenhouse for foundation stocks was fumigated with methyl bromide before planting and the plants hot-water, heat-treated to kill all nematodes and cyclamen mites. Most varieties have grown vigorously. Mildew is very severe on Royal Sovereign, Armore, Ambato, and Stelemaster in the shade of the screenhouse.

15. For fruit producers, plant only virus-free, aphid-free stock of varieties where available, isolate the planting from older plantings at least 3,000 feet, and dust to control aphids. Little is known of the value of isolation and aphid control except for Marshall and Catskill. Both first-year and fruiting beds of Catskill and Marshall should be dusted twice up to blossoming and again twice in the fall with 1 percent parathion, or 4 percent malathion, where there is danger of rapid spread of virus in the fields. Fields of other varieties may, or may not, be badly injured by virus the first year, depending on isolation, vector abundance, and the complex of virus in the area.